

difficulties which he and his contemporaries had to encounter in their youth from the want of any means of carrying on their education, especially in science, during the intervals they had to spare from work. The aims which he has in view in founding the College may be gathered from the following extract from his address:—

"Whatever is necessary for the improvement of scientific industry and for the cultivation of art, especially as applied to manufactures, the trustees will be able to teach; they may also, by a provision subsequent to the original deed, afford facilities for medical instruction; and they are authorised, and indeed enjoined, to revise the scheme of instruction from time to time, so as to adapt it to the requirements of the district in future years, as well as at the present time. It is not my desire to set up an institution in rivalry of any now existing; but to provide the means of carrying further and completing the teaching now given in other scientific institutions and in the evening classes now so numerous in the town and its neighbourhood, and especially in connection with the Midland Institute, which has already conferred so much benefit upon large numbers of students, and which I am glad to see represented here to-day. My wish is, in short, to give all classes in Birmingham, in Kidderminster, and in the district generally, the means of carrying on, in the capital of the Midland district, their scientific studies as completely and thoroughly as they can be prosecuted in the great science schools of this country and the Continent; for I am persuaded that in this way alone—by the acquirement of sound, extensive, and practical scientific knowledge—can England hope to maintain her position as the chief manufacturing centre of the world. I have great and I believe well-founded hope for the future of this foundation. I look forward to its class-rooms and lecture-halls being filled with a succession of earnest and intelligent students, willing to learn not only all that can be taught, but in their turn to communicate their knowledge to others, and to apply it to useful purposes for the benefit of the community."

Thus it will be seen that Sir Joseph Mason's design has been conceived in a spirit of true wisdom; he perceives that the prosperity of Birmingham, like the prosperity of the country at large, depends upon the extent to which every branch of history is founded upon a broad and deep scientific basis. He evidently does not intend that his institution will become a mere "Technical" College. We should think that the trustees will carry out the design and wishes of the founder if they aim to make the Mason College do for Birmingham what the Owens College is doing for Manchester. Moreover, we hope that as in the case of Manchester other endowments will be added to that of the wise and generous founder, and that thus the trustees will be able ultimately to carry out his ideas to their fullest development. Meantime all who have the cause of scientific education at heart, all who wish for the highest prosperity of the country, will feel warm gratitude to and admiration for Sir Joseph Mason, a true benefactor to Birmingham, to England, and to Science.

NOTES

WE can only, this week, express our regret—a regret which is universal—at the death of Sir Charles Lyell, Bart., F.R.S., which took place on Monday last. Sir Charles was born on Nov. 14, 1797, so that he was nearly 78 years of age. We hope to give an obituary notice in our next number.

WE regret to announce the death, on Feb. 17, of the celebrated astronomer, Prof. F. W. August Argelander, at Bonn. He was born at Memel on March 22nd, 1790, and began his studies at the University of Königsberg, where he soon became a zealous pupil of Bessel, and in 1820 his official assistant at

the Observatory. Three years later, he followed a call to Abo (Finland), and his principal occupation there was the observation of fixed stars showing large proper motions. These observations were continued at Helsingfors, where he settled in 1832. He succeeded in pointing out nearly 400 fixed stars, which in the time from 1755 until 1830 have moved over more than fifteen seconds in the direction towards the constellation of Hercules. In 1837, when his pamphlet "On the Motion of the Solar System" had appeared, he received an invitation from the University at Bonn, where an observatory was being built, which was completed in 1845. Here he continued his studies most energetically, and particularly investigated the variable stars. In his "Uranometria" he gave excellent determinations of star-magnitudes. His celestial atlas, which was only completed a little while ago, comprises all stars from the first to the tenth magnitude; it is entirely based on his own determinations of position, and decidedly ranks amongst the best works of the kind.

AN important telegram was received by the French Academy of Sciences, at its sitting of the 22nd February, from M. Mouchez, the head of the St. Paul Transit Station. It is said that the observation of internal contacts was perfectly successful. The external contacts were not good, owing to clouds, the weather having been bad for three months. Numerous photographs have been taken. A steamer had left St. Paul for Cherbourg, bringing the detailed results of the observations.

AT the same sitting, M. Dumas announced that the Academy had received, almost at the same moment, two different parcels sent by two different ships, both consisting of documents sent by Capt. Fleuriat, the head of the Pekin Transit Expedition. These parcels, having been sealed, will not be opened for some time to come.

THE following quaint extract from the *Gazetteer* of May 31, 1769, will no doubt have some interest for our readers at the present time:—"The Transit of Venus over the sun is a phenomenon whereby the astronomers can determine the distance of the sun from the earth, and the dimensions of the whole solar system, more accurately than by any other method. Such a transit will be visible near London on Saturday afternoon, June 3, a little after seven o'clock, if the weather be fair; and never more for this age, nor perhaps for many ages to come, will such a phenomenon be seen in this quarter of the world. The curious, both ladies and gentlemen, who are desirous of being entertained with a sight of this phenomenon, may have the best situation for that purpose, with the assistance of proper persons and telescopes, at Mr. Lightfoot's, at Denmark Hall, on Camberwell Hill, in the road towards Dulwich, where the best of accommodations and wines may be had."

AN official intimation has been received from Dr. Neumayer confirming the announcement, as regards the Deutsche Seewarte at Hamburg, contained in the *Times* telegram noticed in our last number. It appears that the Government have purchased Herr v. Freeden's interest in the establishment, and that he has no longer any connection with it. It does not yet appear what is the relation of the Hydrographic Office at Berlin, of which Dr. Neumayer is chief, to the Deutsche Seewarte, which is also under him.

A SOCIETY has been formed in Calcutta for obtaining spectroscopic observations of the sun.

WE are much gratified to hear that the Committee of the Chester Society of Natural Science recommend for the consideration of the members that a permanent memorial to the late Canon Kingsley, their founder and president, be established. The memorial proposed and recommended is (1) That a Scholarship (including a medal), to be called "The

Kingsley Memorial," be founded for the encouragement of Natural Science, to be open to residents and students within the district embraced by the society, subject to such regulations as may be hereafter agreed upon. 2. That if a sufficient fund be raised, a medal may from time to time be given by the Chester Society of Natural Science, for original research within the district of the aforesaid society, and that the medal be called "The Kingsley Memorial Medal."

WE are glad to see from the report of the Syndicate appointed by the Senate of Cambridge University to organise and superintend courses of lectures and classes at a limited number of populous centres, that the scheme is working well and is embracing a rapidly widening area. In the first term of 1873-4, the number of towns which took advantage of the scheme was three—Nottingham, Derby, and Leicester. This number increased to seven in the following term, and to twelve in the first term of 1874-5. During the present term lectures and classes are being carried on in the following sixteen centres:—Nottingham, Derby, Leicester, Lincoln, Chesterfield, in the Midland district; Leeds, Bradford, Keighley, Halifax, Sheffield, in the Yorkshire district; Stoke-on-Trent, Hanley, Burslem, Newcastle-under-Lyme, in the South Staffordshire district; Liverpool and Birkenhead in the Liverpool district. The subjects on which the lecturers are giving instruction during the present term are Political Economy, English Constitutional History, English Literature, Logic, Physical Geography, Geology, Astronomy, Physical Optics and Spectrum Analysis. A course of lectures is generally concluded in one term, though occasionally it extends over a longer period. The term's course comprises the delivery of twelve weekly lectures and the holding of twelve weekly classes. During the present term the number of lecturers employed is thirteen; the total number of pupils attending the courses is about 3,500; and the sum payable to the University for the teaching, examination, and certificates is 1,150*l*. The Syndicate recommend the adoption of a standing Syndicate for the organisation and superintendence of the lectures. A gentleman in Nottingham has offered the sum of 10,000*l*., to be placed in the hands of trustees, towards the furtherance of this object in that town, provided the Corporation of Nottingham will erect buildings for the accommodation of the University lecturers, to the satisfaction of the Syndicate of the University of Cambridge.

A SERIES of (Davis) Lectures upon zoological subjects will be given in the New Lecture Room, in the Zoological Society's Gardens, Regent's Park, on Thursdays, at 5 p.m., after Easter:—April 15, "Monkeys and their Distribution," by Dr. P. L. Slater, F.R.S.; April 22, "Sea-Lions," by J. W. Clark, M.A.; April 29, "Seals and the Walrus," by J. W. Clark, M.A.; May 6, "Deer and their Allies," by Prof. Garrod; May 13, "Sheep, Oxen, and Antelopes," by Prof. Garrod; May 27, "Camels and Llamas," by Prof. Garrod; June 3, "Elephants," by Prof. Flower, F.R.S.; June 10, "Kangaroos," by Prof. Mivart, F.R.S.; June 17, "Pheasants and their Allies," by Dr. P. L. Slater, F.R.S.; June 24, "The Locomotion of Animals," by Dr. Pye Smith. The lectures will be free to Fellows of the Society and their friends, and to other visitors to the Gardens.

WILLIAM PARKINSON WILSON, Professor of Mathematics at the Melbourne University, died suddenly on Dec. 11. He was Senior Wrangler in 1847, and a Fellow of St. John's, Cambridge, and arrived in the colony in 1855 as a member of the first professorial staff of the University, which he has zealously served ever since. The Professor was everywhere respected. He was, the *Times* correspondent states, at the head of all scientific movements, devoting himself energetically to anything which promised to promote the intellectual progress of the colony. The selection of his successor at the University is entrusted to Prof. Adams, of Cambridge.

A MUNIFICENT gift has been made to Melbourne University. Mr. Samuel Wilson, of Ercildoun, who recently gave 1,100*l*. to the Acclimatisation Society, has sent 30,000*l*. to the Chancellor, intended for the erection of a hall, but free of conditions, and to be otherwise applied if the authorities think fit.

THE Khedive has instructed Dr. Schweinfurth to organise an African Geographical Society in Egypt.

A GRANT of 50*l*. has been made from the Worts Travelling Scholars' Fund (Cambridge) to Arthur Marshall, B.A., of St. John's, to enable him to visit Naples for the purpose of using Dr. Dohrn's zoological station and making researches in natural history, with the understanding that he send specimens to the University, accompanied by reports.

ALPHA FIERE, or Esparto Grass (*Machrochloa tenacissima*, Kth.), the closely compressed bundles of which are so familiar to us either in stack at wharves or in barges on the Thames, in course of transit to the various paper-mills, has created more than usual interest of late, owing to the report that the supply was becoming exhausted. In contradiction to this it is satisfactory to note, on the authority of Col. Playfair, the Consul-General at Algiers, that enormous tracts of land on the high plateaus in all the provinces of Algeria are covered with the plant. Thus, in the province of Algiers it covers an area of about 2,500,000 acres. In the province of Oran the extent of the Alpha growth is almost unlimited. In the circle of Daïa it is stated to cover a space of about 900,000 acres, while in the subdivision of Mascara there is an immense field for its exploration. In the several divisions of the province of Constantine it is estimated that a total of about 570,000 acres are under growth of this substance. These figures alone show an aggregate of some 3,970,000 acres of Esparto known to exist in Algeria. The difficulty, however, is in the want of proper roads or easy means of transport by which the material could be brought to the sea or a railway station. Col. Playfair says that practically there is no limit to the supply of Alpha procurable from Algiers; all that is required is the establishment of railway communication, and the Government of the colony is prepared to sanction the construction of lines, either by French or foreign capitalists, on the most liberal terms. Several companies have been formed for the purchase and exportation of this fibre, which is becoming more sought for in proportion to the increasing demand for paper. The Algerian authorities are quite alive to the necessity of encouraging all such commercial enterprises as may tend to develop this important branch of commerce.

IN a communication to the *Pharmacist* (Chicago) for last month, Mr. H. H. Babcock says he is convinced that *Cypridium spectabile* and *C. pubescens* are capable of producing poisonous effects, on himself at least, similar to those caused by *Rhus toxicodendron*. He bases this statement upon the fact of his having experienced such symptoms after gathering the plants in question several seasons in succession. It seems scarcely possible that these plants, which have long been in cultivation in this country, possess the noxious properties attributed to them; the general properties of the family to which they belong are so different. However, one direct experiment might settle the question.

DR. ALLEYNE NICHOLSON, Professor of Biology in the College of Physical Science in Newcastle-upon-Tyne, has been offered and accepted the chair of Natural History in the University of St. Andrew's.

PROF. GABB reports continued progress in his geological and ethnological survey of the Talamanca district in Costa Rica. It may be remembered that Prof. Gabb was invited several years ago, by the Government of Costa Rica, to take charge of an investigation into the resources of the country, and certain reports of his operations from time to time have shown very

satisfactory progress. He has now accomplished the Talamanca survey, and will probably extend his researches into other parts of the country, particularly that bordering upon the Pacific coast, his previous explorations having been confined to the Atlantic slope. With only four assistants besides Indian labourers, Prof. Gabb has surveyed the entire tract, of about 3,000 square miles, from the borders of civilisation on the north to the borders of Panama, and from the Atlantic to the crest of the Cordilleras; and this he has mapped out more accurately than any other equal area of Costa Rica has been surveyed, not excepting the section where the towns are situated. He also gives reliable information and statistics about an agricultural country sufficiently large, fertile, and healthful to support the entire population of Costa Rica, but which as yet contains only 1,226 Indians and twelve foreigners, of whom only one is white. It is watered by one river, which is navigable throughout the year, and which reaches within thirty miles of the most remote portion of a country valuable for agricultural purposes. In addition to the survey proper, as referred to, information has been gathered in regard to the mineral resources of the region and its animal and vegetable life, immense collections of both, as previously stated, having been sent to the Smithsonian Institution for identification. Among the number are one hundred specimens of monkeys alone, while the other mammals, birds, &c., are in due proportion. The exhaustive inquiries prosecuted into the ethnology of the country have resulted in very rich collections, which have likewise been forwarded to Washington. Numerous vocabularies, with several dialects, have also been obtained, which offer much of promise to the philologist. It is greatly to be hoped that Prof. Gabb's inquiries may be continued, with Costa Rica as a base, until they include the whole of the unknown portions of Central America.

THE *Kölnische Zeitung* of Feb. 10 gives an account of Prof. Böhm's (Dorpat) researches on revival after cases of poisoning. He succeeded in reviving cats which had been poisoned by injection of potash salts into their veins, after forty minutes' duration of a state which was in no way different from actual death, the action of the heart and respiration having completely ceased. He obtained these results by artificial respiration and simultaneous compression of the breast in the vicinity of the heart. The professor points out the importance of the latter point, which he deems as essential as the action of the lungs. In any case his researches are of high interest for the relation they bear upon the revival of poisoned persons.

THE *Bohemia* reports extremely heavy snowstorms which took place in a part of Moravia and Bohemia on Feb. 5, and caused great damage to railways, several trains being thrown off the lines, luckily without much injury to passengers. At Znaim (Moravia) the storm was so violent at noon that it was impossible to see more than three yards ahead.

THE *Oberschlesische Volkszeitung* of Feb. 1 reports the discovery of some colossal remains of the Mammoth (*Elephas primigenius*) near Ober Glogau (Silesia).

THE *Neue Freie Presse* announces that Herr R. Falb, of Vienna, discovered a new variable star, near ι Orionis, on the night of Jan. 31. The discovery was confirmed on the same night by Prof. Oppolzer at his private observatory, and on subsequent nights by the astronomers at the Imperial Observatory of Vienna. The star is visible with the naked eye.

PROF. ASA GRAY, in a paper in the February number of *Silliman's Journal*, on the question, "Do Varieties wear out, or tend to wear out?" comes to the conclusion that from the scientific point of view, sexually propagated varieties, or races, although liable to disappear through change, need not be expected to wear out, and there is no proof that they do; but non-sexually propagated

varieties, though not liable to change, may theoretically be expected to wear out, but to be a very long time about it.

WE are glad to see that the Watford Natural History Society is now completely organised and fairly set a-going. At a recent meeting officers were elected, and a *conversazione* was afterwards held. The president chosen is Mr. John Evans, F.R.S., and Mr. J. Gwyn Jeffreys, F.R.S., is one of the vice-presidents. The first regular meeting is to be held on March 11, when Mr. J. L. Lobley, F.G.S., one of the members of the Council, will read a paper on "The Cretaceous Rocks of England."

ON the 10th inst., at six o'clock in the evening, a large aërolite was observed at Paris, in the department of the Marne, at Orleans, and at Belleisle en Mer. No noise was heard, but the display of light was magnificent. The track was visible for a time varying from a quarter to half an hour.

SEVERAL large landslips are reported as having taken place on the Danish island of Möen, on a chalky rock named "Möensklint;" from another one, called "Jetterbrinken," a piece of several million cubic yards has fallen down. These occurrences are ascribed to enormous changes in the temperature which have lately taken place in that locality.

THE Royal Geological Society of Ireland have just published Part I. vol. iv., new series, of their journal. It contains: On a new genus of fossil fish of the order Dipnoi, by Dr. Traquair; On the microscopic structure of Irish granites and of the Lambay porphyrite, by Prof. Hull; On a bed of fossiliferous "kunkur," by J. E. Gore; On the Leinster coal-field, by J. McC. Meadows; On a raised estuarine beach at Tramore Bay, by E. Hardman; On the elevated shell-bearing gravels near Dublin, by the Rev. Maxwell Close; and Remarks on the genera *Palæchinus* and *Archæocidaris*, by W. H. Bailly.

THE Forty-third Annual Report of the Royal Zoological Society of Ireland has just been published. The number of visitors to the gardens of the Society during 1874 was 109,923, and the receipts from the same, 1,442*l.* 14*s.* 4*d.* The number of visitors would appear to have been the smallest during the last ten years, but owing to an increase of the admission fees the income is scarcely below that of the best of the ten years. The Council propose to construct "an Elephant Compound on the plan of those so well known in the London Gardens," the total cost of which will amount to 150*l.*

THE additions to the Zoological Society's Gardens during the last week include two Feline *Douracoulis* (*Nyctipithecus felinus*) and two Squirrel Monkeys (*Saimaris sciurea*) from Brazil; a Saffron Cock of the Rock (*Rupicola crocea*) from Demerara; a Grey Mullet (*Mugil capito*), twelve Cottus (*Cottus bubalis*), and eighteen Basse (*Labrax lupus*), all British, deposited and purchased.

PRELIMINARY INQUIRY INTO THE EXISTENCE OF ELEMENTS IN THE SUN NOT PREVIOUSLY TRACED *

IN a paper communicated to the Royal Society on December 12, 1872 (Phil. Trans. 1873, p. 253), I have shown that the test formerly relied on to decide the presence or absence of a metal in the sun, namely, the presence or absence of the brightest and strongest lines of the metal in question in the average solar spectrum, was not a final one, and that the true test was the presence or absence of the longest lines of the metal: this longest line being that which remains longest in the spectrum when the pressure of the vapour is reduced.

Of the test in question I have said in the paper already mentioned, "It is one, doubtless, which will shortly enable us to

* Extract from a memoir presented to the Royal Society in November 1873, which has just been printed in the "Philosophical Transactions."